

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : KAO CORP

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(54) EXTERNAL COMPOSITION FOR SCALP

(57)Abstract:

PURPOSE: To obtain an external composition for scalp containing a specific polyalkylene glycol monoalkyl ether in a specific amount and shows excellent preventive action on hair falling with inhibition of dandruff and scalp itching.

CONSTITUTION: This composition comprises (A) 0.1 to 5wt.%, preferably 0.3 to 3wt.% of a polyalkylene glycol monoalkyl ether of formula I (R1 is H, methyl; R2 is a 1

to 5 C alkyl; (m) is 2 to 6), (B) 0.001 to 1wt.% of an

antimicrobial agent, (C) 0.01 to 5wt.% of a sebum secretion inhibitor comprising a carboxylic acid (or its

derivative) of formula II (Y is a mono- or dihydroxy-

substituted alkyl; (n) is 4 to 14, (D) 0.01 to 5wt.% of a

bloodstream stimulator and (E) 0.01 to 3wt.% of an oil-

absorbing carrier. The component A is suitably, for example, diethylene glycol monomethyl

ether. The composition is obtained by adding respective components to a 10 to 90% ethanol solution to form into the formulation of hair tonic, hair growth stimulator, emulsion or lotion.



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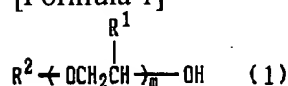
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CLAIMS

[Claim(s)]

[Claim 1] General formula (1)

[Formula 1]

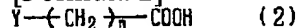


the scalp characterized by containing the polyalkylene glycol monoalkyl ether expressed with (R1 shows a hydrogen atom or a methyl group among a formula, R2 shows the alkyl group of carbon numbers 1-5, and m shows the number of 2-6) 0.1 to 5% of the weight -- an external-preparations constituent.

[Claim 2] the scalp according to claim 1 which contains an antimicrobial agent 0.001 to 1% of the weight -- an external-preparations constituent.

[Claim 3] General formula (2)

[Formula 2]



the carboxylic acid expressed with (Y shows among a formula the alkyl group of monochrome, the straight chain by which the dihydroxy permutation was carried out, or branched chain, and n shows the integer of 4-14), and the scalp according to claim 1 which contains the sebum acrinia agent chosen as a list from the ester derivative and an amide derivative 0.01 to 5% of the weight -- an external-preparations constituent.

[Claim 4] the scalp given [of claims 1-3 which contain a circulation accelerator 0.01 to 5% of the weight / one] in a term -- an external-preparations constituent.

[Claim 5] the scalp given [of claims 1-4 which contain oil absorption nature support 0.01 to 3% of the weight / one] in a term -- an external-preparations constituent.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] the scalp which skipped this invention, suppressed the itch and was excellent in the fallen hair preventive effect -- it is related with an external-preparations constituent.

[0002]

[Description of the Prior Art] the former and the scalp -- by normalizing a function, and making blood circulation of the scalp good, and raising the function of the hair follicle, hair fostering is promoted and fallen hair, a dandruff, the external preparations that blended various kinds of drug effect components for the purpose of preventing an itch, and a hair restorer are used. as the drug effect component used here -- a circulation accelerator, a local irritation agent, and a hair root -- an activator, a germicide, an antiseborrheic drug, etc. are mentioned, these various components are combined, or a new drug effect component is developed, and many hair restorers are manufactured.

[0003] However, it could not say that each conventional hair restorer had the enough effectiveness of preventing and skipping fallen hair and suppressing an itch, and an effective hair-fostering facilitatory effect was not acquired, either. Therefore, truant was played, the itch was suppressed and a hair restorer excellent in the effectiveness which prevents fallen hair was desired.

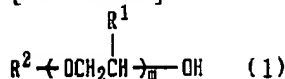
[0004]

[Means for Solving the Problem] the scalp which was excellent in the effectiveness which plays truant, suppresses an itch and prevents fallen hair in this actual condition when this invention persons used specific polyalkylene glycol monoalkyl ether, as a result of inquiring wholeheartedly -- a header and this invention were completed for an external-preparations constituent being obtained.

[0005] That is, this invention is a general formula (1).

[0006]

[Formula 3]



[0007] the scalp characterized by containing the polyalkylene glycol monoalkyl ether expressed with (R1 shows a hydrogen atom or a methyl group among a formula, R2 shows the alkyl group of carbon numbers 1-5, and m shows the number of 2-6) 0.1 to 5% of the weight -- an external-preparations constituent is offered.

[0008] The polyalkylene glycol monoalkyl ether used by this invention The thing of 2 and 3 is desirable. what is expressed with said general formula (1) -- it is -- especially -- min formula = -- For example, the diethylene-glycol monomethyl ether, diethylene glycol monoethyl ether, The diethylene-glycol monopropyl ether, the diethylene-glycol monobutyl ether, The diethylene-glycol mono-pentyl ether, diethylene-glycol mono-isopropyl ether, Diethylene-glycol mono-t-butyl ether, dipropylene glycol monomethyl ether, The dipropylene glycol monoethyl ether, the dipropylene glycol monopropyl ether, The dipropylene glycol monobutyl ether, the dipropylene glycol mono-pentyl ether, Dipropylene glycol

mono-isopropyl ether, dipropylene glycol mono-t-butyl ether, The triethylene glycol monomethyl ether, the triethylene glycol monoethyl ether, The triethylene glycol monopropyl ether, the triethylene glycol monobutyl ether, The triethylene glycol mono-pentyl ether, triethylene glycol mono-isopropyl ether, Triethylene glycol mono-t-butyl ether, tripropylene glycol monomethyl ether, The tripropylene glycol monoethyl ether, the tripropylene glycol monopropyl ether, The tripropylene glycol monobutyl ether, the tripropylene glycol mono-pentyl ether, tripropylene glycol mono-isopropyl ether, tripropylene glycol mono-t-butyl ether, etc. are mentioned. The diethylene-glycol monomethyl ether, diethylene glycol monoethyl ether, the diethylene-glycol monopropyl ether, the diethylene-glycol monobutyl ether, the triethylene glycol monomethyl ether, the triethylene glycol monoethyl ether, the triethylene glycol monopropyl ether, and the triethylene glycol monobutyl ether are [among these] especially desirable. [0009] when it applies to the scalp, while these polyalkylene glycol monoalkyl ether (1) heightens the moisture retainability of the scalp -- the fluidity of the sebum of pore and the hair pars infundibularis lobi anterioris hypophyseos -- raising -- discharge of sebum -- smooth -- carrying out -- the scalp -- since too much growth of a normal bacterial flora can be controlled and it can be kept clean, a dandruff and an itch can be suppressed, fallen hair can be prevented and, moreover, it excels in safety.

[0010] polyalkylene glycol monoalkyl ether (1) -- one sort or two sorts or more -- combining -- it can use -- the scalp of this invention -- it is preferably blended 0.3 to 3% into an external-preparations constituent 0.1 to 5% of the weight ("% " only shows hereafter). Effectiveness sufficient at less than 0.1% is not acquired, but if it exceeds 5%, a feeling of smeariness will become strong.

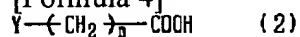
[0011] the scalp of this invention -- if an antimicrobial agent is blended with an external-preparations constituent, the absorptivity from the pore of an antimicrobial agent is raised, truant will be played and the effectiveness of suppressing an itch will become what was further excellent. As an antimicrobial agent used here, especially if used for the usual charge of hair makeup etc., it will not be restricted, for example, triclosan, a TORIKURORO carbamide, ketoconazole, miconazole, clotrimazole, a chloramphenicol, a tetracycline, a sulfas agent, a PIROKUTONO lamin, hinokitiol, etc. are mentioned.

[0012] When they are blended 0.05 to 0.3% 0.001 to 1% during [all] a presentation, its safety to the scalp is high, and since especially these antimicrobial agents can reinforce the target effectiveness more, they are desirable.

[0013] moreover, the scalp of this invention -- an external-preparations constituent -- a general formula (2)

[0014]

[Formula 4]



[0015] If the sebum acrinia agent chosen as the carboxylic acid expressed with (Y shows among a formula the alkyl group of monochrome, the straight chain by which the dihydroxy permutation was carried out, or branched chain, and n shows the integer of 4-14), and a list from the ester derivative and an amide derivative is blended, the absorptivity from the pore of these sebum acrinia agent will be raised, and a sebum drying effect will become what was further excellent.

[0016] Among a general formula (2), as what is shown by Y, the thing of the alkyl group of carbon numbers 1-5 is desirable, and hydroxymethyl group, 2-hydroxyethyl radical, 1-hydroxyethyl radical, 1, and 2-dihydroxyethyl radical etc. is especially desirable. furthermore, as the ester derivative of said carboxylic acid, and an amide derivative of said carboxylic acid Although it is not restricted especially if it decomposes on the skin or within the skin, as an ester derivative of said carboxylic acid The alkyl ester of branching, such as alkyl ester, such as methyl and ethyl, and 2-ethylhexyl, The aryl ester containing rings, such as benzyl, a glycerol, propylene glycol, Ester with polyhydric alcohol, such as a polyethylene glycol, etc. is mentioned, and an amide with amino acid, such as monoethanolamide, diethanolamide or a glycine, and a phenylalanine, etc. is further mentioned as an amide derivative of a carboxylic acid.

[0017] As a compound expressed with a general formula (2), for example A 6-hydroxy hexanoic acid (6-Hydroxyhexanoic acid), A 8-hydroxy octanoic acid (8-Hydroxyoctanoic acid), 9-hydroxy nonoic acid

(9-Hydroxynonanoic acid), A 10-hydroxy decanoic acid (10-Hydroxydecanoic acid), 10, 11-dihydroxy undecanoic acid (10, 11-Dihydroxyundecanoic acid), 10-hydroxy undecanoic acid (10-Hydroxyundecanoic acid), 10-hydroxy-10-methyl undecanoic acid (10-Hydroxy-10-methylundecanoic acid), 11-hydroxy undecanoic acid (11-Hydroxyundecanoic acid), A 11-hydroxy undecane amide (11-Hydroxyundecanamide), 11-hydroxy undecanoic acid ethyl (Ethyl-11-hydroxyundecanoate), 12-hydroxy dodecanoic acid (12-Hydroxydodecanoic acid), etc. can be mentioned. 9-hydroxy nonoic acid, a 10-hydroxy decanoic acid, and 11-hydroxy undecanoic acid are [among these] especially desirable.

[0018] these sebum acrinia agents -- one sort or two sorts or more -- combining -- it can use -- the scalp of this invention -- since solid **, **, and a feeling of use are good when it applies to the scalp if it blends 0.1 to 3% especially 0.01 to 5% into an external-preparations constituent, it is desirable.

[0019] moreover, the scalp of this invention -- if a circulation accelerator is blended with an external-preparations constituent, the absorptivity from the pore of this circulation accelerator will be raised, and a circulation promotion operation will become a still stronger thing. As a circulation accelerator used here, especially if used for the usual charge of hair makeup etc., it will not be restricted, for example, the minoxidil, sialid extract extractives, tocopherol acetate, St. John's wort extractives, capsicum tincture, etc. are mentioned.

[0020] As for these circulation accelerators, it is desirable to be able to use combining one sort or two sorts or more, and to blend 0.01 to 5% during [all] a presentation.

[0021] furthermore, the scalp of this invention -- oil absorption nature support can be blended, thereby, a dandruff and an itch can be suppressed to an external-preparations constituent, and the effectiveness of preventing fallen hair can be further raised to it. As oil absorption nature support used here, mean particle diameter is 0.005-30 micrometers. It is 0.1-10 micrometers especially. A thing is desirable from the point of the feel at the time of application, and squalene oil absorption ability has it at the point that the thing of 0.5 or more ml/g maintains the clean nature of the scalp. [still more desirable]

[0022] As this oil absorption nature support, talc, a mica, a kaolin, a bentonite, nylon, a silica, silicone resin, silicone rubber, an acrylic polymer, porous vinyl system polymers (for example, thing given in the synthetic example 2 of JP,63-31675,A etc.), etc. are mentioned, for example. Since especially such oil absorption nature support is excellent in the effectiveness and the feel of this invention when it is blended 0.1 to 2% 0.01 to 3% during [all] a presentation, it is desirable.

[0023] the scalp of this invention -- alcohols, such as the component used for the further usual charge of hair makeup etc., for example, ethanol etc., a feel improver, a moisturizer, perfume, coloring matter, an ultraviolet ray absorbent, an antioxidant, an anti-inflammatory agent, antiseptics, an astringent, etc. can be suitably blended with an external-preparations constituent in the range which does not spoil the effectiveness of this invention.

[0024] the scalp of this invention -- an external-preparations constituent can be manufactured according to the usual approach by blending each component with 10 - 90% of ethanol solution, and can be made into the gestalt directly applied to scalp, such as a tonic, a charge of hair-fostering hair growing, a milky lotion, and a lotion.

[0025]

[Effect of the Invention] the scalp of this invention -- an external-preparations constituent is skipped, suppresses an itch and is excellent in the fallen hair prevention effectiveness. moreover, the scalp of this invention -- in an external-preparations constituent, if an antimicrobial agent, a sebum acrinia agent, or a circulation accelerator is used in addition to polyoxy-alkylene-glycol monoalkyl ether (1), the absorptivity from such pores will be raised and antibacterial effectiveness, a sebum drying effect, or a circulation facilitatory effect will become what was further excellent. Furthermore, the effectiveness of this invention can be heightened more by using oil absorption nature support.

[0026]

[Example] Next, although an example is given and this invention is explained further, this invention is not limited to these examples.

[0027] The tonic agent of the presentation shown in example 1 table 1 was manufactured with the conventional method, and it evaluated about those dandruffs, itch depressor effect, and the fallen hair

prevention effectiveness. A result is shown in Table 2.

[0028] (The evaluation approach) The condition of the scalp was observed for 42 men whom a dandruff and an itch worry, truant was played inside, Homo sapiens with many itches and the fallen hair at the time of a shampoo were extracted, 23 Homo sapiens with many amounts of fallen hair was extracted, and the test subject took usually. Using the tonic agent of the presentation shown in Table 1, when its hair was shampooed on the basis of bis die, morning, and sleeping before as operation, optimum dose was applied to the scalp after the shampoo, and it massaged. Moreover, throughout [trial term] had the commercial shampoo used for unification, and forbade the operation of use and Parma of other rinse agents, a tonic agent, and a hairdressing agent, and a hair dye. The shampoo by the beautician was performed once at two weeks, the hair which fell out at the time of a shampoo was extracted, measurement of a fallen hair number and the observation classification of the condition of a hair root were performed, further, after a beautician's shampoo, the judgment of effectiveness was skipped in the condition of 48 hours, and it is the judgment of grade, and his consciousness, and it was performed [it checked the existence and extent of generating of an itch, and]. The valuation basis is as follows. In addition, in this invention article, 11 persons and a comparison article evaluated by 12 test subjects, and the result was shown in Table 2 as the average.

[0029] (Valuation basis)

Dandruff (visual judgment); grade -- very many dandruffs are generated : three dandruffs are generated - : The dandruff has come out 2 a few. : One dandruff is not observed. : 0 pruritus (he consciousness); there is an itch which cannot carry out grade patience : Itchy, although it can bear three times : 2 -- itch which he forgets after a while : 1 itch is not sensed. : Judgment [of zero hair root]; the shape of a beautiful stick is carried out : normal -- a hair root -- the abnormalities in :as which abnormalities, such as withering and deformation, are regarded -- hair root [0030]

[Table 1]

成 分 (%)	本発明品 1	比較品 1
ジエチレングリコールモノ エチルエーテル	2.0	—
エタノール	50.0	50.0
精製水	バランス	バランス
	100	100

[0031]

[Table 2]

		試験開始時	2週間後	4週間後	6週間後	8週間後
本 発 明 品	抜け毛本数	206±37	199±40	168±37	152±27	138±24
	異常毛根の本数	48±16	42±17	27±12	14±7	14±6
	フケのグレード	2.6±0.4	1.8±0.5	1.4±0.6	0.8±0.3	0.9±0.3
	痒みのグレード	2.1±0.2	1.8±0.3	1.5±0.4	0.9±0.3	1.0±0.2
比 較 品	抜け毛本数	198±45	211±52	184±39	203±48	197±51
	異常毛根の本数	45±17	39±12	51±22	48±15	43±18
	フケのグレード	2.4±0.3	2.5±0.4	1.9±0.2	2.2±0.5	2.3±0.4
	痒みのグレード	2.1±0.3	1.7±0.2	2.0±0.4	1.9±0.2	2.2±0.4

平均±SD

[0032] The tonic agent of this invention played truant, suppressed the itch, and was excellent in the effectiveness of preventing fallen hair so that clearly from the result of Table 2.

[0033] The tonic agent of the presentation shown in example 2 tables 3-6 was manufactured with the conventional method, and it evaluated about fallen hair, a dandruff, and the itch prevention effectiveness. A result is shown in Tables 3-6.

[0034] (The evaluation approach) I had the class product used like the operation of an example 1 with the duration of service for one month, and use evaluation was respectively performed by about ten persons. Performing a dandruff and pruritus by his judgment, fallen hair extracted and judged the fallen hair at the time of a shampoo, and performed comprehensive evaluation of each group as follows.

A dandruff, pruritus, fallen hair valuation basis;

improvement : O -- a little -- improvement : O -- eternal : ** -- a little -- aggravation - aggravation: -- x

[0035]

[Table 3]

成 分 (%)	本 発 明 品					
	2	3	4	5	6	7
ジェチレングリコールモノ メチルエーテル	1.0	0.5	—	0.5	0.5	1.0
ジェチレングリコールモノ エチルエーテル	—	0.5	—	1.0	0.5	1.0
ジプロピレングリコールモノ イソプロピルエーテル	—	0.5	3.0	—	0.5	—
ピロクトンオラミン	—	—	—	0.1	—	—
ミコナゾール	—	—	—	—	0.1	—
トリクロサン	—	—	—	—	—	0.1
センブリ抽出エキス*1	—	—	—	—	—	3.0
ミノキシジル	—	—	—	—	—	0.5
オトギリソウエキス*2	—	—	—	—	—	—
酢酸トコフェロール	—	—	—	—	—	—
9-ヒドロキシノナン酸	—	—	—	—	—	—
10-ヒドロキシデカン酸	—	—	—	—	—	—
11-ヒドロキシウンデカン 酸	—	—	—	—	—	—
トスパール120*3	—	1.0	—	—	—	—
多孔性ビニル系ポリマー*4	—	—	1.0	—	—	—
ポリオキシエチレン硬化ヒマシ 油(25B, 0.)	—	0.4	0.4	0.4	0.2	0.2
モノステアリン酸ポリオキシ エチレンソルビタン(20B, 0.)	—	—	—	—	—	—
セタノール	—	0.1	—	—	—	—
スクワラン	—	—	—	—	—	—
パルミチン酸イソプロピル	—	—	—	—	—	—
香料	0.3	0.3	0.3	0.3	0.3	0.3
エタノール	50.0	30.0	30.0	50.0	50.0	50.0
精製水	バランス	バランス	バランス	バランス	バランス	バランス
評 価	抜け毛防止効果	○	○	○	○	◎
	フケ防止効果	○	○	○	◎	◎
	痒み防止効果	○	○	○	○	○

*1: 一丸ファルコス社製

*2: 丸善製薬社製

*3: シリコーンレジン (東芝シリコーン社製) : 平均粒径 2 μm、
スクアレン吸油能約 1 ml

*4: 特開昭63-316715号の合成例2に従って得られる多孔性ビニル系ポリマー:
平均粒径 5 μm、スクアレン吸油能約 2 ml

[0036]

[Table 4]

成 分 (%)		本 発 明 品				
		8	9	10	11	12
ジエチレングリコールモノ メチルエーテル		1.0	3.0	4.0	—	—
ジエチレングリコールモノ エチルエーテル		—	—	—	4.0	2.0
ジプロピレングリコールモノ イソプロピルエーテル		1.0	—	—	—	2.0
ビロクトンオラミン		—	—	—	—	—
ミコナゾール		—	—	—	—	—
トリクロサン		0.1	0.1	—	—	—
センブリ抽出エキス*1		3.0	3.0	—	—	—
ミノキシジル		—	—	—	—	—
オトギリソウエキス*2		1.0	—	—	—	—
酢酸トコフェロール		—	0.1	—	—	—
9-ヒドロキシノナン酸		—	—	5.0	—	—
10-ヒドロキシデカン酸		—	—	—	3.0	—
11-ヒドロキシウンデカン 酸		—	—	—	—	3.0
トスパール120*3		—	—	—	—	—
多孔性ビニル系ポリマー *4		—	—	—	—	—
ポリオキシエチレン硬化ヒマシ 油(25R, 0.)		0.2	0.2	—	—	—
モノステアリン酸ポリオキシ エチレンソルビタン(20R, 0.)		—	—	1.5	1.0	1.0
セタノール		—	—	—	—	—
スクワラン		—	—	0.5	0.5	0.5
パルミチン酸イソプロピル		—	—	0.5	0.5	0.5
香料		0.3	0.3	0.3	0.3	0.3
エタノール		50.0	50.0	10.0	10.0	10.0
精製水		バランス	バランス	バランス	バランス	バランス
評 価	抜け毛防止効果	◎	◎	○	○	○
	フケ防止効果	○	○	◎	◎	◎
	痒み防止効果	○	○	◎	◎	◎

[0037]

[Table 5]

成 分 (%)		比 較 品					
		2	3	4	5	6	7
ジエチレングリコールモノ メチルエーテル	—	—	—	—	—	—	—
ジエチレングリコールモノ エチルエーテル	—	—	—	—	—	—	—
ジプロピレングリコールモノ イソプロピルエーテル	—	—	—	—	—	—	—
ビロクトンオラミン	—	—	—	0.1	—	—	—
ミコナゾール	—	—	—	—	0.1	—	—
トリクロサン	—	—	—	—	—	—	0.1
センブリ抽出エキス*1	—	—	—	—	—	—	3.0
ミノキシジル	—	—	—	—	—	—	0.5
オトギリソウエキス*2	—	—	—	—	—	—	—
酢酸トコフェロール	—	—	—	—	—	—	—
9-ヒドロキシノナン酸	—	—	—	—	—	—	—
10-ヒドロキシデカン酸	—	—	—	—	—	—	—
11-ヒドロキシウンデカン 酸	—	—	—	—	—	—	—
トスバール120*3	—	1.0	—	—	—	—	—
多孔性ビニル系ポリマー*4	—	—	1.0	—	—	—	—
ポリオキシエチレン硬化ヒマシ 油(25B, 0.)	—	0.4	0.4	0.4	0.2	0.2	0.2
モノステアリン酸ポリオキシ エチレンソルビタン(20B, 0.)	—	—	—	—	—	—	—
セタノール	—	0.1	—	—	—	—	—
スクワラン	—	—	—	—	—	—	—
パルミチン酸イソプロピル	—	—	—	—	—	—	—
香料	0.3	0.3	0.3	0.3	0.3	0.3	0.3
エタノール	50.0	30.0	30.0	50.0	50.0	50.0	50.0
精製水	バランス	バランス	バランス	バランス	バランス	バランス	バランス
評 価	抜け毛防止効果	×	×	×	×	×	○
	フケ防止効果	×	×	△	○	△	△
	痒み防止効果	×	×	△	○	△	△

[0038]

[Table 6]

成 分 (%)		比 較 品				
		8	9	10	11	12
ジエチレングリコールモノ メチルエーテル	—	—	—	—	—	—
ジエチレングリコールモノ エチルエーテル	—	—	—	—	—	—
ジプロピレングリコールモノ モノイソプロピルエーテル	—	—	—	—	—	—
ビロクトンオラミン	—	—	—	—	—	—
ミコナゾール	—	—	—	—	—	—
トリクロサン	0.1	0.1	—	—	—	—
センブリ抽出エキス*1	3.0	3.0	—	—	—	—
ミノキシジル	—	—	—	—	—	—
オトギリソウエキス*2	1.0	—	—	—	—	—
酢酸トコフェロール	—	0.1	—	—	—	—
9-ヒドロキシノナン酸	—	—	5.0	—	—	—
10-ヒドロキシデカン酸	—	—	—	3.0	—	—
11-ヒドロキシウンデカン 酸	—	—	—	—	3.0	—
トスパール120*3	—	—	—	—	—	—
多孔性ビニル系ポリマー*4	—	—	—	—	—	—
ポリオキシエチレン硬化ヒマシ 油(25B, 0.)	0.2	0.2	—	—	—	—
モノステアリン酸ポリオキシ エチレンソルビタン(20E, 0.)	—	—	1.5	1.0	1.0	—
セタノール	—	—	—	—	—	—
スクワラン	—	—	0.5	0.5	0.5	—
パルミチン酸イソプロピル	—	—	0.5	0.5	0.5	—
香料	0.3	0.3	0.3	0.3	0.3	—
エタノール	50.0	50.0	10.0	10.0	10.0	—
精製水	バランス	バランス	バランス	バランス	バランス	—
評 価	抜け毛防止効果	○	○	○	○	○
	フケ防止効果	×	×	○	○	○
	痒み防止効果	×	×	○	○	○

[0039] The tonic agent of the presentation shown in example 3 table 7 was manufactured with the conventional method, and it asked for the rate of sebum composition control about each. A result is shown in Table 7.

[0040] (The evaluation approach) The male hamster after the birth [five to 6 weeks old] was made into one groups [six], and each tonic agent was applied to the right ear pinna of the hamster of each group once per day. Ethanol water was similarly applied to the left ear pinna 50% as control. Krebs-Ringer which excises the ear pinna of a hamster, takes out the skin tissue which contains a sebaceous gland with a diameter of 3mm from a right-and-left ear-pinna center section, and contains radioactive sodium acetate after applying to one week for two weeks 5 times After performing culture in the phosphoric-acid buffer for 3 hours and hydrolyzing the obtained organization, the amount of synthetic lipids in a sebaceous gland was calculated by extracting in a hexane and measuring the radioactive indicator lipid in hexane fractionation with a liquid scintillation counter. It asked for the rate of sebum composition control according to the following type, and the result was shown in Table 7 as the average of each group.

[0041]

[Equation 1]

皮脂合成抑制率 (%) =

$$100 - \frac{\text{右耳介より得られた組織中の皮脂合成量}}{\text{左耳介より得られた組織中の皮脂合成量}} \times 100$$

[0042]

[Table 7]

成 分 (%)	本 発 明 品				比 較 品		
	1 3	1 4	1 5	1 6	1 3	1 4	1 5
9-ヒドロキシノナン酸	2	—	—	—	2	—	—
10-ヒドロキシデカン酸	—	2	—	—	—	2	—
11-ヒドロキシウンデカン酸	—	—	2	2	—	—	2
ジエチレングリコールモノ メチルエーテル	3	—	—	1	—	—	—
ジエチレングリコールモノ エチルエーテル	—	3	—	1	—	—	—
ジブロピレングリコールモノ イソプロピルエーテル	—	—	3	1	—	—	—
エタノール	50	50	50	50	50	50	50
精製水	バランス	バランス	バランス	バランス	バランス	バランス	バランス
皮脂合成抑制率 (%)	42	60	75	78	18	22	28

[Translation done.]